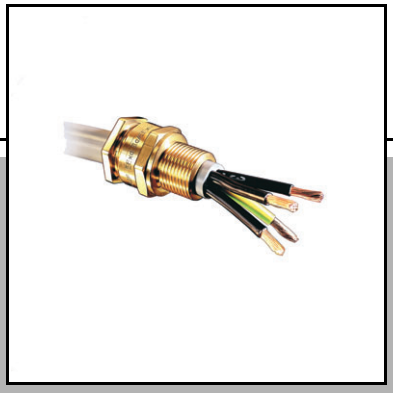

Operating Instructions

Cable Glands Ex d and Ex e for Unarmoured Cables

> 8163/2-A2F

STAHL

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2 General Information

2.1 Manufacturer

R. STAHL Schaltgeräte GmbH
Am Bahnhof 30
74638 Waldenburg, Germany

Phone: +49 7942 943-0
Fax: +49 7942 943-4333
Internet: www.stahl.de

2.2 Information regarding the Operating Instructions

ID NO.: 138996 / 816360300120
Publication Code: S-BA-8163/2-A2F-03-en-06/12/2013

We reserve the right to make technical changes without notice.

2.3 Symbols Used

▶	Action prompt: Describes actions to be carried out by the user.
▷	Reaction symbol: Describes the results or the reactions to the actions taken.
✗	Bullet
☞	Information symbol: Describes the notes and recommendations.
	Warning sign: Danger from energised parts!
	Warning sign: Danger due to an explosive atmosphere!

3 General Safety Information

3.1 Safety Instructions for Assembly and Operating Personnel

The operating instructions contain basic safety instructions which are to be observed during installation, operation and maintenance. Failure to observe these instructions can place persons, plant and the environment at risk.

⚠ WARNING
Risk due to unauthorised work on the device! ▷ Risk of injury and damage to equipment. ▶ Assembly, installation, commissioning and servicing work must only be performed by personnel who are both authorised and suitably trained for this purpose.

Before assembly/commissioning:

- ▶ Read through the operating instructions.
- ▶ Give adequate training to the assembly and operating personnel.
- ▶ Ensure that the contents of the operating instructions are fully understood by the personnel in charge.
- ▶ The national installation and assembly regulations (e.g. IEC/EN 60079-14) apply.

When operating the components:

- ▶ Ensure the operating instructions are made available on location at all times.
- ▶ Observe safety instructions.
- ▶ Observe national health and safety regulations.
- ▶ Servicing/maintenance or repair work which are not described in the operating instructions must not be performed without prior agreement with the manufacturer.
- ▶ Any damage may render explosion protection null and void.
- ▶ Any alterations and modifications to the component impairing its explosion protection are not permitted.
- ▶ Install and use the component only if it is undamaged, dry and clean.

If you have questions:

- ▶ Contact the manufacturer.

3.2 Warnings

Warnings are sub-divided in these operating instructions according to the following scheme:

⚠ WARNING
Type and source of the danger! ▷ Possible consequences. ▶ Measures to avoid danger.

They are always identified by the signal word “WARNING“ and sometimes also have a symbol which is specific to the danger involved.

3.3 Conformity to Standards

The cable glands comply with the following regulations and standards:

- ✗ Directive 94/9/EC
- ✗ IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7, IEC/EN 60079-15
- ✗ IEC/EN 61241-0, IEC/EN 61241-1

4 Designated Use

The cable gland is used to introduce permanently installed cables into electrical equipment of type of protection Increased Safety "e", Flameproof Enclosure "d", Restricted Breathing "nR" and Protection by Enclosure "tD".

It is approved for use in hazardous areas of zones 1, 2, 21 and 22.

⚠ WARNING

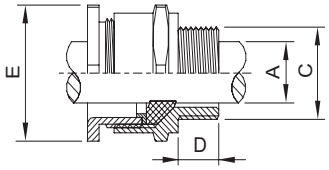
Only use the component for its intended purpose!

- ▷ Otherwise, the manufacturer's liability and warranty will be rendered void.
- ▶ Only use the component under the operating conditions described in the operating instructions.
- ▶ The component must be used in hazardous areas only according to these operating instructions.

5 Technical Data

Explosion protection	
ATEX	
Zone 1 / 21	Ⓔx II 2 GD Ex d IIC / Ex e II / Ex tD A21 IP66
Zone 2	Ⓔx II 3 G Ex nR II
IECEx	
Zone 1 / 21	Ex d IIC / Ex e II / Ex tD A21 IP66
Zone 2	Ex nR II
Certificates	
ATEX	
Zone 1 / 21	SIRA 06 ATEX 1188 X
Zone 2	SIRA 07 ATEX 4327 X
IECEx	IECEx SIR 06.0075 X
Type of Protection	IP66, IP67 & IP68 (10 m depth)
Version	BS 6121, EN 50262
Operating temperature range	- 60 °C ... + 130 °C
Material	
Gland	Brass, nickel-plated brass, stainless steel
Seal	SOLO LSF

Dimensional drawings (all dimensions in mm) - subject to alterations



07593E00

Gland size	Dimensions [mm]				
	Thread size C	Cable diameter A		Thread length D	Across corners E
		min.	max.		
20s/16	M20 x 1.5	3.2	8.7	15	26.5
20s	M20 x 1.5	6.1	11.7	15	26.5
20	M20 x 1.5	6.5	14.0	15	30.0
25	M25 x 1.5	11.1	20.0	15	39.9
32	M32 x 1.5	17.0	26.3	15	45.5
40	M40 x 1.5	23.5	32.2	15	55.4
50s	M50 x 1.5	31.0	38.2	15	61.0
50	M50 x 1.5	35.6	44.1	15	66.5
63s	M63 x 1.5	41.5	50.0	15	77.6
63	M63 x 1.5	47.2	56.0	15	83.2
75s	M75 x 1.5	54.0	62.0	15	88.7
75	M75 x 1.5	61.1	68.0	15	94.2

6 Transport, Storage and Disposal

Transport

▶ Shock-free in its original carton, do not drop, handle carefully.

Storage

▶ Store in a dry place in its original packaging

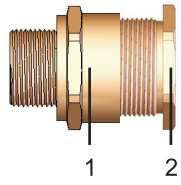
Disposal

▶ Ensure environmentally friendly disposal of all components according to legal regulations.

7 Assembly

☞	We recommend the usage of a sealing ring between the enclosure wall and the male union.

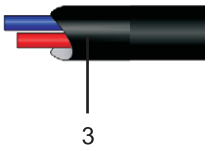
Overview



07571E00

1 Male union
2 Pressure ring

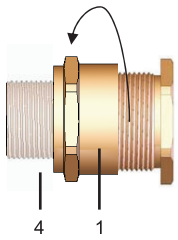
Preparing installation



07570E00

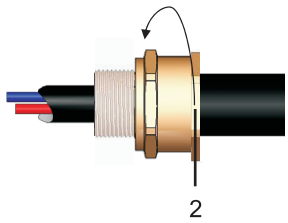
▶ Remove the cable outer sheath according to the device geometry.

Installation



07572E00

▶ If necessary insert male union (1) into sealing ring.
▶ Screw male union (1) into enclosure (4).



07573E00

▶ Push cable through male union.
▶ Tighten pressure ring (2).
▶ Install the cable in the enclosure.

8 Commissioning

Before commissioning the device with the cable gland, make sure that

- ✗ the cable gland is not damaged.
- ✗ if necessary the sealing ring is present and mounted correctly.
- ✗ unused holes are sealed by stopping plugs certified to Directive 94/9/EC.
- ✗ the cables have been inserted correctly.
- ✗ the bearing surfaces for the cable gland (sealing ring) are flat.

9 Maintenance

- ▶ Consult the relevant national regulations (e.g. IEC/EN 60079-17) to determine the type and extent of inspections.
- ▶ Plan the intervals so that any defects in the equipment which may be anticipated are promptly detected.

Check during maintenance:

- ✗ Compliance with the permitted temperatures in accordance with IEC/EN 60079-0.
- ✗ the cable glands for cracks.
- ✗ the seals for damage.

10 Accessories and spare parts

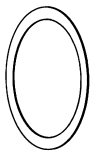
⚠ WARNING

Use of non-approved accessories and spare parts.

▷ The manufacturer's liability and warranty will be rendered void.

▶ Use only original accessories and original spare parts manufactured by R. STAHL.

Designation	Illustration	Description				Order number	Weight kg
PVC shroud		Designation	Gland size	Across flats	Across corners		– –
		HV04	20S/16 or 20S	24	26.6	109076	0.017
		HV06	20	30.5	33.3	109078	0.024
		HV09	25S or 25	37.5	40.5	109080	0.033
		HV11	32	46	51	109082	0.040
		HV15	40	55	61	109084	0.070
		HV18	50S	60	66.5	109085	0.075
		HV21	50	70	78.6	109086	0.001
		HV23	63S	75	83.2	109094	0.117
		HV25	63	80	89	109096	0.158
		HV28	75S	89	101.6	109099	0.001
		HV30	75	99	111.1	109101	0.001

Designation	Illustration	Description			Order number	Weight kg
Sealing ring	 04968T00	Thread size	Minimum thickness	Outer diameter		– –
		M16	2.0	25.4	167668	0.001
		M20	2.0	28.6	111778	0.001
		M25	2.0	35.0	111779	0.001
		M32	2.0	44.5	111780	0.001
		M40	2.0	50.8	167671	0.001
		M50	2.0	65.0	167672	0.001
		M63	2.0	76.2	167673	0.001
		M75	2.0	95.0	167674	0.001
Lock nut	05865E00	To fasten the cable glands in through holes For cable glands				– –
		Type	Thread size	Packing unit		
		Brass, nickel-plated	M16 x 1.5	50	138383	0.135
		Brass, nickel-plated	M20 x 1.5	50	138389	0.241
		Brass, nickel-plated	M25 x 1.5	50	138395	0.348
		Brass, nickel-plated	M32 x 1.5	25	138401	0.267
		Brass, nickel-plated	M40 x 1.5	10	138407	0.218
		Brass, nickel-plated	M50 x 1.5	4	138413	0.109
		Brass, nickel-plated	M63 x 1.5	1	138418	0.054
		Brass nickel-plated	M 75 x 1.5	1	110877	0.151

11 Type Examination Certificate (Page 1)

SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE **Sira 06ATEX1188X**
Issue 2

i) Elastomeric sealed Cable Glands Ranges for braided or unarmed cables

Type designation 8163/2-**-A2F-** Range**

Coded: II 2 GD
Ex d IIC/Ex e II
Ex d IIC
Ex e II
Ex tD A21 IP66

or

I M2
Ex d I/Ex e I
Ex d I
Ex e I

The 8163/2-****-A2F-** range of cable glands are intended to terminate circular braided or unarmoured cables into enclosures without compromising the explosion protection provided by the enclosures in accordance with relevant codes of practice. They consist of a male-threaded front entry component and a seal actuation nut. The front entry component fitted with an Evoprene Super G621 elastomeric displacement sealing ring, and nylon 6 stepped skid washer, is intended to screw into an entry point of its associated enclosure. The seal actuation nut threads into the front entry component thereby effecting flameproof and environmental sealing onto the cable outer sheath.

Additional Specific Design options

- Alternative material of manufacture of the skid washer to be the same as the gland material.

Type designation 8163/2-**-A2FRC-** Range**

Coded: II 2 GD
Ex d IIC/Ex e II
Ex d IIC
Ex e II
Ex tD A21 IP66

The 8163/2-****-A2FRC-** range of cable glands are intended to terminate circular braided or unarmoured cables into enclosures without compromising the explosion protection provided by the enclosures in accordance with relevant codes of practice. They consist of a male-threaded front entry component, a seal actuation nut and either an outer captivated or running coupling. The front entry component, fitted with an Evoprene Super G621 elastomeric displacement sealing ring and a carbon steel `C' clip (sizes 16 to 50), is intended to screw into an entry point of its associated enclosure. The seal actuation nut threads into the front entry component thereby effecting flameproof and environmental sealing onto the cable outer sheath. The outer running coupling is retained in the seal actuation nut using the carbon steel 'C' clip to allow free running thread connection to conduit.

Additional Specific Design options

- Alternative material of manufacture of the skid washer to be the same as the gland material.
- Alternative 'C' clip plate finish: Stainless steel
  Phosphor bronze
  Beryllium copper

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Sira Certification Service
Rake Lane, Eccleston, Chester, CH4 9JN, England
Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: info@siracertification.com
Web: www.siracertification.com

1 **TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 07ATEX4327X** Issue: **2**

4 Equipment: **Ranges of Cable Glands (See Descriptions)**

5 Applicant: **R. STAHL Schaltgeräte GmbH**

6 Address: Am Bahnhof 30
74638 Waldenburg (Württ)
Germany

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of Category 3 equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to European Union Directive 94/9/EC of 23 March 1994.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN 60079-0:2004
EN 60079-15:2003

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

12 The marking of the equipment shall include the following:

II 3 G
Ex nR II

Project Number 51M16472
C. Index 07

D R Stubbings BA MIET
Certification Manager

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Sira Certification Service
Rake Lane, Eccleston, Chester, CH4 9JN, England
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Fax: +44 (0) 1244 681330
Email: info@siracertification.com
Web: www.siracertification.com

Form 9400 Issue 1

12 Declaration of Conformity

Konformitätserklärung
Declaration of Conformity
Déclaration de Conformité

R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany
erklärt in alleiniger Verantwortung, *declares in its sole responsibility, déclare sous sa seule responsabilité,*

dass das Produkt: *that the product:* *que le produit:*	**Kabel- und Leitungseinführung** *Cable glands* *Entrée de cable*
Typ(en), *type(s), type(s):*	**8163/2-....-...-..**

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.
is in conformity with the requirements of the following directives and standards.
est conforme aux exigences des directives et des normes suivantes.

Richtlinie(n) *Directive(s)* *Directive(s)*	**Norm(en)** *Standard(s)* *Norme(s)*
94/9/EG: ATEX-Richtlinie *94/9/EC: ATEX Directive* *94/9/CE: Directive ATEX*	EN 60079-0:2012 EN 60079-1:2007 EN 60079-7:2007 EN 60079-31:2009
Kennzeichnung, *marking, marquage:*	**II 2 G Ex d IIC Gb** **II 2 G Ex e IIC Gb** **Ex II 2 D Ex tb IIIC T 80°C Db** **CE 0158** **I M2 Ex d I Mb** **I M2 Ex e I Mb**
EG-Baumusterprüfbescheinigung: *EC Type Examination Certificate:* *Attestation d'examen CE de type:*	**Sira 06 ATEX 1188 X** (Sira Certification Service, Rake Lane, Eccleston, Chester, CH4 9JN, England, NB0518)
Produktnormen nach Niederspannungsrichtlinie: *Product standards according to Low Voltage Directive:* *Normes des produit pour la Directive Basse Tension:*	EN 50262:1998 + A1:2001 + A2:2004
2004/108/EG: EMV-Richtlinie *2004/108/EC: EMC Directive* *2004/108/CE: Directive CEM*	**Nicht zutreffend nach Artikel 1, Absatz 3.** ***Not applicable according to article 1, paragraph 3.*** ***Non applicable selon l'article 1, paragraphe 3.***
Sonstige Normen: *Other Standards:* *Autres normes:*	BS 6121:1989

Spezifische Merkmale und Bedingungen für den Einbau siehe Betriebsanleitung.
Specific characteristics and how to incorporate see operating instructions.
Caractéristiques et conditions spécifiques pour l'installation voir le mode d'emploi.

Waldenburg, Datum 06.12.13		
Ort und Datum *Place and date* *Lieu et date*	**Steffen Buhl** **Leiter Entwicklung Schaltgeräte** *Director R&D Switchgear* *Directeur R&D Appareillage*	**J.-P. Rückgauer** **Leiter Qualitätsmanagement** *Director Quality Management* *Directeur Assurance de Qualité*

F-4174-601 01/2011 STMZ 816360020010-01